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Abstract

The present invention relates to a device and a fabricating method thereof, the device having a gate hole of triode structure fabricated by using an anode oxidation process, which can be operated by a very low driving voltage and emit electrons in a constant density. The fabricating method of a gate hole in accordance with the present invention includes the steps of: depositing an insulating layer and a metal layer on a substrate; forming a plurality of microholes in the metal layer by performing an anode oxidation process on the metal layer; and forming a plurality of insulating holes on the insulating layer by etching a part of the insulating layer, which is exposed through the microholes of the metal layer, by using the processed metal layer as a mask. A field emission device of the present invention includes: a lower substrate having an insulating layer and a metal layer deposited thereon, a plurality of microholes formed in the insulating layer and the metal layer by using an anode oxidation process and photo-etching method, emitters for emitting electrons formed in the microholes and gate electrodes for obtaining the electrons emitted from the emitters; a upper substrate having a transparent electrode and a fluorescent body; and a spacer for maintaining a vacuum gap in the upper and lower substrates, which is formed on the upper substrate.